

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (currently amended) A process for precision-machining a cylindrical inner surface, in particular a cylinder bearing surface, ~~in which~~ comprising:
 subjecting the cylindrical inner surface ~~is subjected~~ to at least one preliminary honing step and a precision-honing step, ~~characterized wherein~~
 - ~~in that~~ the cylinder bearing surface has material of different hardnesses in the axial direction,
 - ~~in that~~ the preliminary honing step produces a cone (11) in the cylindrical inner surface, in such a way in that cone (11) widens out from a harder region (4) toward a softer region (6), and
 - in the subsequent precision-honing step, the cone (11) is compensated for again in the harder region (4) to produce a cylindrical inner surface, while the cone (11) is retained in the softer region (6).
2. (currently amended) The process as claimed in claim 1, ~~characterized in that~~ wherein the cone (11) of the cylindrical inner surface is produced by a honing stone (8) which runs conically with respect to the said inner surface.

3. (currently amended) The process as claimed in claim 1, ~~characterized in that~~ wherein the cone (11) is produced by adjusting the honing parameters.
4. (currently amended) The process as claimed in claim 3, ~~characterized in that~~ wherein the cone (11) is produced by adjusting the advance (V) of a honing tool (7') in the axial direction (9) and/or by adjusting the contact pressure (P) of the honing tool (7') against the cylindrical inner surface.
5. (currently amended) The process as claimed in claim 1 ~~one of claims 1 to 4~~, ~~characterized in that~~ wherein a honing tool (18) is used with different types of honing stones (20, 22) which are deployed selectively for the preliminary honing step or precision-honing step or which are deployed selectively for different regions (4, 6) of the cylindrical inner surface.
6. (currently amended) The process as claimed in claim 1 ~~one of claims 1 to 5~~, ~~characterized in that~~ wherein the cone (11) is introduced over a length (10) of from 20 mm to 200 mm in the axial direction (9), and a change (12) in the radius of the cylindrical inner surface of from 10 μ m to 100 μ m is established over this region.

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7. (currently amended) The process as claimed in claim 1 ~~one of~~
~~claims 1 to 6, characterized in that~~ wherein a second,
opposite cone (30) is introduced into the softer region (6),
so that a convex shape (28) is established in the softer
region (6).